WHAT WE CLAIM IS:

1. A process for upgrading a Fischer–Tropsch feedstock which comprises

(a) recovering from a Fischer–Tropsch reactor a Fischer–Tropsch wax fraction containing paraffins and a Fischer–Tropsch condensate fraction, wherein the Fischer–Tropsch condensate fraction contains alcohols boiling below about 370°C;

(b) contacting the Fischer–Tropsch condensate fraction with a dehydration catalyst in a dehydration zone under dehydration conditions selected to convert at least some of the alcohols present in said fraction into olefins and recovering a first intermediate effluent from said dehydration zone;

(c) pyrolyzing the Fischer–Tropsch wax fraction in a thermal cracking zone under thermal cracking conditions pre-selected to crack paraffins molecules in the Fischer–Tropsch wax to form olefins and collecting a second intermediate effluent from the thermal cracking zone;

(d) passing the first and second intermediate effluents recovered from steps (b) and (c) to an oligomerization zone containing an oligomerization catalyst under oligomerization conditions to form an oligomerization mixture having a higher molecular weight than either of said first and second intermediate effluent;

(e) hydrofinishing the oligomerization mixture in a hydrofinishing zone; and

(f) recovering from the hydrofinishing zone a C_{10} plus hydrocarbon product.

2. The process of claim 1 wherein the C_{10} plus hydrocarbon product comprises a lubricating base oil.

3. The process of claim 1 wherein the C_{10} plus hydrocarbon product comprises diesel.

4. The process of claim 1 wherein naphtha is also recovered from the hydrofinishing zone.

5. The process of claim 1 wherein at least a part of the oligomerization mixture boiling below about 370°C is separated prior to hydrofinishing and is recycled to the thermal cracking zone.

6. The process of claim 1 wherein at least part of the second intermediate effluent boiling above about 290°C is passed to an isomerization zone where it is contacted with an isomerization catalyst under isomerizing conditions, whereby an isomerized effluent having a lowered pour point is recovered.

7. The process of claim 6 wherein the part of the second intermediate effluent that is sent to the isomerization unit includes a C_{20} hydrocarbon fraction.

8. The process of claim 6 wherein the isomerization catalyst contains an intermediate pore SAPO.

9. The process of claim 8 wherein the SAPO is selected from the group consisting of SAPO-11, SAPO-31, and SAPO-41.

10. The process of claim 9 wherein the SAPO is SAPO-11.

11. The process of claim 6 wherein the isomerization catalyst contains an intermediate pore zeolite.

12. The process of claim 11 wherein the intermediate pore zeolite is selected from the group consisting of ZSM-22, ZSM-23, SSZ-32, ZSM-35, and ZSM-48.

13. The process of claim 6 wherein the isomerized effluent is passed to the hydrofinishing zone.

14. The process of claim 1 wherein the oligomerization mixture recovered from the oligomerization zone has an average molecular weight at least 10 percent higher than either of said first and second intermediate effluents.

15. The process of claim 14 wherein the oligomerization mixture recovered from the oligomerization zone has an average molecular weight at least 20 percent higher than either of said first and second effluents.

16. The process of claim 15 wherein the oligomerization takes place in an ionic liquid media.

17. The process of claim 1 including the additional step of removing contaminants that will deactivate the oligomerization catalyst from the first intermediate effluent prior to passing it into the oligomerization zone.

18. The process of claim 1 wherein the Fischer–Tropsch wax fraction is in the vapor phase when it is pyrolyzed in the thermal cracking zone.

19. The process of claim 18 wherein the temperature in the thermal cracking zone is within the range of from about 510°C to about 870°C.

20. The process of claim 18 wherein the pressure in the thermal cracking zone is within the range of from about 0 atmospheres to about 5 atmospheres.

21. The process of claim 20 wherein the pressure in the thermal cracking zone is within the range of from about 0 atmospheres to about 2 atmospheres.

22. The process of claim 1 wherein the thermal cracking zone is contained in a continuous flow through reactor.

23. The process of claim 22 wherein steam is present in the thermal cracking zone.

24. The process of claim 22 wherein the residence time of the wax fraction in the reactor is in the range of from about 1.5 seconds to about 500 seconds.

25. The process of claim 24 wherein the residence time of the wax fraction in the reactor is in the range of from about 5 seconds to about 300 seconds.

26. The process of claim 1 wherein the cracking conversion in the thermal cracking zone of the paraffins in the wax fraction is greater than 30% by weight.

27. A process for increasing the yield of lubricating base oil from a Fischer–Tropsch plant which comprises:

(a) contacting a syngas with a Fischer–Tropsch catalyst under Fischer–Tropsch reaction conditions pre-selected to yield a Fischer–Tropsch product having an olefinicity of at least 20% by weight;

(b) recovering from the Fischer–Tropsch product a Fischer–Tropsch wax fraction containing paraffins and a Fischer–Tropsch condensate fraction, wherein the Fischer–Tropsch condensate fraction contains alcohols boiling below about 370°C;

(c) contacting the Fischer–Tropsch condensate fraction with a dehydration catalyst in a dehydration zone under dehydration conditions selected to convert at least some of the alcohols present in said fraction into olefins and recovering a first intermediate effluent from said dehydration zone;

(d) raising the temperature the Fischer–Tropsch wax fraction sufficiently to vaporize the fraction;

(e) steam cracking the vaporized Fischer–Tropsch wax fraction in a flow through reactor under thermal cracking conditions pre-selected to achieve a cracking conversion of the paraffin molecules in the Fischer–Tropsch wax of greater than 30% by weight and collecting a second intermediate effluent from the flow through reactor;

(f) passing the first and second intermediate effluents recovered from steps (c) and (e) to an oligomerization zone containing an oligomerization catalyst under oligomerization conditions to form an oligomerization mixture having a higher molecular weight than either of said first and second intermediate effluent;

(g) hydrofinishing the oligomerization mixture in a hydrofinishing zone; and

(h) recovering from the hydrofinishing zone a lubricating base oil product.

28. The process of claim 27 wherein the temperature in the flow through reactor is within the range of from about 510°C to about 705°C.

29. The process of claim 27 wherein the pressure in the flow through reactor is within the range of from about 0 atmospheres to about 5 atmospheres.

30. The process of claim 29 wherein the pressure in the flow through reactor is within the range of from about 0 atmospheres to about 2 atmospheres.

31. The process of claim 27 wherein the residence of the wax fraction in the reactor is in the range of from about 1.5 seconds to about 500 seconds.

32. The process of claim 27 wherein the residence of the wax fraction in the reactor is in the range of from about 5 seconds to about 300 seconds.

33. The process of claim 27 wherein the cracking conversion in the thermal cracking zone of the paraffins in the wax fraction is greater than 50% by weight.

34. The process of claim 33 wherein the cracking conversion in the thermal cracking zone of the paraffins in the wax fraction is greater than 70% by weight.

35. The process of claim 27 wherein the olefinicity of the Fischer–Tropsch condensate fraction is at least 40% by weight.

36. The process of claim 35 wherein the olefinicity of the Fischer–Tropsch condensate fraction is at least 50% by weight.

37. The process of claim 27 wherein the oligomerization takes place in a an ionic liquid media.

38. The process of claim 27 further including the step of removing any nonvaporized Fischer–Tropsch wax prior to steam cracking the vaporized Fischer–Tropsch wax in step (e).

39. The process of claim 27 wherein the Fischer–Tropsch catalyst contains cobalt as an active metal.

40. The process of claim 27 wherein the Fischer–Tropsch catalyst contains iron as an active metal.

41. A process for increasing the yield of olefins from a Fischer–Tropsch plant which comprises:

(a) contacting syngas with a Fischer–Tropsch catalyst under Fischer–Tropsch reaction conditions pre-selected to yield a Fischer–Tropsch product having an olefinicity of at least 20% by weight;

(b) recovering from the Fischer–Tropsch product a Fischer–Tropsch wax fraction containing paraffins;

(c) raising the temperature the Fischer–Tropsch wax fraction sufficiently to vaporize the fraction;

(d) steam cracking the vaporized Fischer–Tropsch wax fraction in a flow through reactor under thermal cracking conditions pre-selected to achieve a cracking conversion of the paraffin molecules in the Fischer–Tropsch wax of greater than 30% by weight; and

(e) collecting an effluent having increased olefin content from the flow through reactor.

42. The process of claim 41 wherein the temperature in the flow through reactor is within the range of from about 510°C to about 870°C.

43. The process of claim 41 wherein the pressure in the flow through reactor is within the range of from about 0 atmospheres to about 5 atmospheres.

44. The process of claim 43 wherein the pressure in the flow through reactor is within the range of from about 0 atmospheres to about 2 atmospheres.

45. The process of claim 41 wherein the residence time of the wax fraction in the reactor is in the range of from about 1.5 seconds to about 500 seconds.

46. The process of claim 41 wherein the residence time of the wax fraction in the reactor is in the range of from about 5 seconds to about 300 seconds.

47. The process of claim 41 wherein the cracking conversion in the thermal cracking zone of the paraffins in the wax fraction is greater than 50% by weight.

48. The process of claim 47 wherein the cracking conversion in the thermal cracking zone of the paraffins in the wax fraction is greater than 70% by weight.

49. The process of claim 41 wherein the olefinicity of the Fischer–Tropsch condensate fraction is at least 40% by weight.

50. The process of claim 49 wherein the olefinicity of the Fischer–Tropsch condensate fraction is at least 50% by weight.

51. The process of claim 41 wherein the Fischer–Tropsch catalyst is an iron-based catalyst.

52. The process of claim 41 wherein the effluent having increased olefin content recovered from the flow through reactor is passed to an oligomerization zone wherein the olefins are contacted with an oligomerization catalyst under oligomerization conditions and an oligomerization product having increased molecular weight as compared to the effluent is recovered.

53. The process of claim 52 wherein the oligomerization product is used to prepare a lubrication base oil.

54. The process of claim 41 further including the step of removing any nonvaporized Fischer–Tropsch wax prior to steam cracking the vaporized Fischer–Tropsch wax in step (d).

55. The process of claim 41 wherein the Fischer–Tropsch catalyst contains cobalt as an active metal.

56. The process of claim 41 wherein the Fischer–Tropsch catalyst contains iron as an active metal.